

Appln No. 09/780,887

REMARKS

Support for the amendments to the claims is found in previously submitted claims and in the specification. Claim 19 has been amended to state claim 19 as an independent claim with only a minor amendment to the amount of CaO + MgO to be less than 3.4. Except for this minor change there is no modification of the scope of the claim as it was stated as a dependent claim from claim 13. The other amended claims formerly dependent on claim 1 are amended to be dependent from claim 19. Claim 22 is amended to incorporate the method of previously submitted claim 1. Claims 23 and 24 find support in the specification at page 3, paragraph 0006.

In the Office Action the restriction requirement is acknowledged and applicants' affirm the election for further prosecution claims 13-22 drawn to the glass composition.

Previously submitted claim 13 was objected to for the informality of a missing period. Claim 13 is now canceled.

REJECTION UNDER 35 U.S.C. 112

Previously submitted claim 12 was rejected under the second paragraph of Section 112 as being indefinite for lacking antecedent basis for the terms "the process".

Claim 22 has been amended to incorporate the method of previously submitted claim 1. With this amendment it is respectfully submitted that claim 22 complies with 35 U.S.C. 112.

CLAIM REJECTION UNDER 35 U.S.C. 102

Previously submitted claims 13-22 were rejected under Section 102(b) as anticipated by Morimoto et al. U.S. Patent 5,362,689 ('689) and separately anticipated by the Jeanvoine et al. U.S. Patent 5,700,579 ('579).

It is respectfully submitted that canceling claim 13 and having claim 19 in independent form and having the other claims either directly or indirectly dependent from claim 19,

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except for claim 22, that these claims are novel and unobvious separately over '689 and '579.

Claim 19 has also been amended to show that the total amount of calcium oxide and magnesium oxide in the glass is from 12 to less than 13.4 wt%. Support for this amendment is found in the specification at pages 4 and 5, paragraph 0013, and pages 7 and 8, paragraph 0020.

It is respectfully submitted that with the amendment to claim 19 that this claim and the claims directly or indirectly dependent therefrom, these claims and claim 22, as amended, are novel and unobvious over the '689 patent. This is based on the fact that there is no teaching or suggestion of the combined amount of calcium oxide and magnesium oxide while also having a ratio of calcium oxide to magnesium oxide of about 2 to about 5 in order to also have a glass having the log 2 viscosity and log 4 viscosity as claimed.

Also, claim 19, as amended, and claims directly and indirectly dependent therefrom, are novel and unobvious over the '579 patent because there is no teaching or suggestion of having the total amount of calcium oxide and magnesium oxide of less than 13.4 weight percent to give the log 2 viscosity and log 4 viscosity as claimed.

The '579 reference at Example 1 at column 4, lines 50-64, was indicated by the Office Action as anticipating the glass recited in claims 13-17. Example 1 at column 4, lines 50-64, was indicated as having an anticipating composition for previously submitted claims 13-22. This example of the '579 reference has an amount of calcium oxide of 9.50% and an amount of magnesium oxide of 3.90% which gives a total amount of calcium oxide and magnesium oxide of 13.4 wt%. Amended claim 19 and dependent claims therefrom have an amount of calcium oxide plus magnesium oxide of less than 13.4 wt% in order to achieve the temperature values for the claimed log 2 and log 4 viscosities.

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Therefore it is respectfully submitted that claims 14-22 and added claims 23 and 24 are novel and unobvious over the '579 patent.

Further it was noted that for claims 19-21, the glasses would be inherent.

It is respectfully submitted that the glass compositions of claims 19-21 are not inherent since it is well recognized from the case of Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 U.S.P.Q.2d 1746, 1749 (Fed. Cir. 1991 (copy enclosed) that for an anticipation to exist when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. The court in the Continental Can case cited *In Re Oelrich* 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981) for this proposition. This case notes that inherency, however, must not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient. Such extrinsic evidence has not been indicated in the Office Action.

Previously submitted claims 13-22 were rejected under 35 U.S.C. 102(e) from the reference Nakashima et al. U.S. Patent 6,313,052 B1 ('052).

Example 20 was indicated by the Office Action as anticipating the previously submitted claims 13-18.

It is respectfully submitted that even Example 20 is not anticipatory of applicants' claimed invention of claim 19 and

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claims dependent therefrom. There is no teaching or suggestion in the reference of several points claimed in these claims.

These points include: 1) the total amount of calcium oxide and magnesium oxide for the glass in the range of about 12 to less than 13.4; 2) the ratio of calcium oxide to magnesium oxide to lower the melting point to the specified range of the log 2 viscosity of claim 19; and 3) achieving the log 4 viscosity for the forming temperature.

What ~~too~~  
See table  
mg of CaO = 12

- Definition  
Book

Actually the '052 teaches away from obtaining a forming temperature as claimed in claim 19 since all of the forming temperatures of Tables 1, 2 and 3 are higher than that in the range of claim 19 from 1010°C to 1034°C. For inherency to exist as noted above in the case law, the result must naturally flow from the teachings of the reference. There is no teaching to select a ratio of calcium oxide to magnesium oxide and have a total amount of the calcium oxide and magnesium oxide to achieve the lower melting point of the log 2 viscosity as now claimed. Also there is no teaching or suggestion of having the forming temperature as now claimed as the log 4 viscosity range.

agree

Therefore it is respectfully submitted that claim 19 and claims dependent therefrom are novel and unobvious over the '052 reference.

In regards to claim 22, there is no teaching or suggestion in any of the references to achieve a lower melting temperature for the glass while substantially maintaining the bending and annealing temperatures by increasing the calcium oxide and decreasing the magnesium oxide as claimed. Therefore it is respectfully submitted that claim 22, as amended, is novel and unobvious over the '689 reference and separately over the '579 reference.

- Restrict

Also, it is respectfully submitted that claims 23 and 24 are patentable in showing the function of the particular ranges claimed in claims 19 and 20.

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Claims 13-22 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 16-25 of copending Application No. 09/974,124.

It is respectfully submitted that applicants will submit a provisional terminal disclaimer over claims 16-25 of the copending patent Application No. 09/974,124 for any patent that issues covering those claims.

Previously submitted claims 13-22 were indicated as being conflicting claims under 35 U.S.C. 103(a)/102(f)(g). It was noted that these claims conflict with claims 16-25 of commonly assigned U.S. Patent Application No. 09/974,124.

It is respectfully submitted that there is no conflict in the claims. The claims of the captioned application for claims 14-21, as amended, and claims 23 and 24 claim the total amount of CaO and MgO from about 12 to less than 13.4 weight percent while the ratio of CaO to MgO is from about 2 to about 5. The claims of U.S. Patent Application No. 09/974,124 do not have the ratio limitation. Also for claim 22 none of the claims of U.S. Patent Application No. 09/974,124 have lowering the melting temperature of a glass composition including CaO and MgO while substantially maintaining the bending and annealing temperatures, comprising the steps of:

increasing the CaO by a selected weight percent; and  
decreasing the MgO by substantially the same weight  
percent.

Also the captioned patent application was filed February 9, 2001, and the assignment recordation dated April 2, 2001, is from Reel 011688, Frame 0996 having four pages. A copy of this assignment record and the assignment are enclosed herewith.

U.S. Patent Application No. 09/974,124 was filed October 8, 2001, and is actually commonly assigned to PPG Industries Ohio, Inc. where the two applications have two of three inventors the same. A copy of this assignment and the

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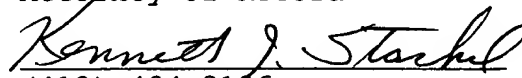
recordation notice of Reel 012529, Frame 0233 having four pages and recordation date of January 16, 2002, are enclosed herewith. Based on the actual assignment documents as shown as recorded in the patent office documentations, the applications are actually commonly assigned. Therefore it is respectfully submitted that the obligation of commonly assigning by the inventors is already shown and further documentation is not necessary.

Accordingly, in view of the above amendments, explanations and remarks, reconsideration and allowance of claims 14-22, as amended, and claims 23 and 24 as added are respectfully requested.

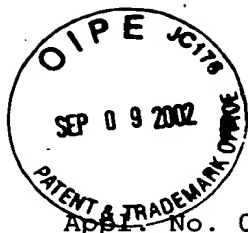
Attached hereto is a marked-up version of the amendments to the claims made by the instant amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS**

Please cancel without prejudice claim 13.

Please amend claims 14-20 and 22 and add claims 23 and 24 in the below indicated manner.

14. (amended) The composition according to claim [13] 19, wherein CaO is in the range of greater than 9 to 12 weight percent.

15. (amended) The composition according to claim [13] 19, wherein CaO is in the range of 9.1 to 11 weight percent.

16. (amended) The composition according to claim [13] 19, wherein MgO is in the range of 2 to less than 4 weight percent.

17. (amended) The composition according to claim [13] 19, wherein CaO + MgO is in the range of 12 to 13.5 weight percent.

18. (amended) The composition according to claim [13] 19, wherein CaO + MgO is in the range of 12.5 to 13 weight percent.

19. (amended) A glass composition, comprising:

<u>SiO<sub>2</sub></u>	<u>70 to 75 weight percent</u>
<u>Na<sub>2</sub>O</u>	<u>12 to 15 weight percent</u>
<u>K<sub>2</sub>O</u>	<u>0 to 5 weight percent</u>
<u>CaO</u>	<u>&gt; 9 weight percent</u>
<u>MgO</u>	<u>&lt; 4 weight percent</u>
<u>Al<sub>2</sub>O<sub>3</sub></u>	<u>0 to 2 weight percent</u>
<u>SO<sub>3</sub></u>	<u>0 to 1 weight percent</u>
<u>Fe<sub>2</sub>O<sub>3</sub></u>	<u>0 to 2 weight percent</u>

wherein:

<u>SiO<sub>2</sub> + Al<sub>2</sub>O<sub>3</sub></u>	<u>≥ 70 weight percent</u>
<u>Na<sub>2</sub>O + K<sub>2</sub>O</u>	<u>10 to 15 weight percent</u>
<u>CaO + MgO</u>	<u>12 to less than 13.4 weight percent</u>
<u>CaO/MgO</u>	<u>2 to 5</u>

[The composition according to claim 13,] wherein the glass composition has a log 2 viscosity in the range of about 2570°F to about 2590°F (1410°C to 1421°C) and a log 4 viscosity in the range of about 1850°F to about 1894°F (1010°C to 1034°C).

20. (amended) The composition according to claim [13]19, wherein the glass composition has a log 7.6 viscosity in the range of about 1300°F to about 1350°F (704°C to 732°C) and a log 13 viscosity in the range of about 1016°F to about 1020°F (547°C to 549°C).

22. (amended) A flat glass product made by the following method [process of claim 1] lowering the temperature of glass composition having CaO and MgO for the glass characteristic selected from melting temperature, forming temperature, liquidus temperature and any combinations thereof, comprising the steps of:  
increasing the CaO by a selected weight percent; and  
decreasing the MgO by substantially the same weight percent.

--23. The composition according to claim 19, wherein the melting point of the glass composition from the log 2 viscosity reduces fuel usage in preparing the glass.--

--24. The composition according to claim 20, wherein the melting point of the glass composition from the log 2 viscosity reduces fuel usage in preparing the glass and the bending and annealing temperatures of the glass from the log 7.6 viscosity in the range of about 1300°F to about 1350°F (704°C to 732°C) and a log 13



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viscosity in the range of about 1016°F to about 1020°F (547°C to 549°C) are in the range for a higher melting glass.--